DETAILED ACTION

Response to Amendment

1. In response to the office action from 7/22/2008, the applicant has submitted an amendment, filed 12/16/2008, amending independent claims 1 and 28, while arguing to traverse the art rejection based on the limitation regarding the speech recognition engine and the agent architecture *(Amendment, Pages 12-17)*. Applicant's arguments have been fully considered, however the previous rejection is maintained due to the reasons listed below in the response to arguments.

2. In response to amended claim 27, the examiner has withdrawn the previous objection directed towards minor informalities.

3. As no terminal disclaimer has been filed, the previous Double Patenting rejection is maintained.

Response to Arguments

4. Applicant's arguments have been fully considered but they are not persuasive for the following reasons:

With respect to independent claim 1, the applicants argue that the combination of Bennett et al *(U.S. Patent: 6,615,172)* and Lin et al *("A Distributed Architecture for Cooperative Spoken Dialogue Agents with Coherent Dialogue State and History," 1999)* fails to teach the claimed speech recognition engine. In support of such arguments, the applicants first argue that Lin teaches away from their invention because Lin notes that there are issues with a centralized model and defines domain independent and domain dependent procedures *(Amendment, Pages 13-14)*. Thus, the applicants argue that since Lin teaches this independent data for acoustic speech recognition and disavows the use of domain and state/history information for recognition, the combination of Bennett and Lin fails to teach the applicants' claimed speech recognition engine *(Amendment, Pages 13-14)*.

In response, the examiner notes that it is the teachings of Bennett that are relied upon for the domain-dependent speech recognition. Bennett teaches that based upon user's state and context during an interactive session, grammars and dictionaries are dynamically loaded into a speech recognizer *(Col. 27, Lines 17-67)*. Thus, Bennett mentions that speech recognition comprises grammars and dictionaries that are context/state specific. This position is further supported by the teachings of Lin. Although relied upon for the teaching of dialog agent architecture, Lin also discloses that speech recognition lexicons and grammars are part of a graph search in recognition (*Fig. 2)*. The speech recognition section shown in Lin is only related to general acoustic matching and not the actual language understanding portion of the recognition *(Section 2.2)*. By using a general set of acoustic models, Lin can save on network bandwidth *(as is argued by the applicant)*, but never states that such models cannot be used, and thus, does not teach away from their use. Furthermore, it is noted that it is the primary Bennett reference that

already teaches this concept and does not require the incorporation of this concept from Lin that would even result in a "teaching away". Thus, this argument has been fully considered, but is not convincing.

The applicants next argue that Lin's graph search fails to address the deficiencies of the references because the claim cites a parser and graph search which are functions related to a parser not the claimed speech recognition engine *(Amendment, Page 14)*. The examiner respectfully disagrees for two reasons. First, as was noted above, it is the Bennett reference that provides the teaching of domain-dependent speech recognition. Second, graph search is known in the art as being a speech recognition process and the parser in Lin directly corresponds to the claimed parser *(i.e., graph search and parsing- which indicates two separate processes, Fig. 2)*. Thus, these arguments have been fully considered, but are not convincing.

The applicants further argue that the prior art fails to teach that data used by the speech recognizer is dynamically updated based on at least a history of one or more prior dialogs associated with the user because Bennett allegedly deletes data once speech is recognized *(Amendment, Page 15)*. In response, the examiner notes that the section of Bennett the applicants rely upon is found in Col. 28, Lines 30-36. In this section, Bennett is merely noting that once recognition is accomplished the data necessary for completing this process is cleared out from system memory so that new required data can be entered. This section would actually add support to Bennett's dynamic updating because newly required speech recognition data is always loaded into memory. The data is selected based upon a user's status/context within a dialog history which is maintained *(Col. 27, Lines 17-51)*. There is no mention in Bennett that this status/context history is deleted upon recognition, only that the data required for recognition

is cleared out of a memory. Further, since the claim language states that data is updated for speech recognition based on a dialog history and Bennett teaches dynamically updating data for speech recognition in a memory based on an updated dialog history, Bennett does teach the aforementioned claim limitation. Thus, this argument has been fully considered, but is not convincing.

Next, the applicants address the claimed "agent architecture". The applicants argue that Lin fails to teach that agents communicatively couple the services of an "agent manager, a system agent, the plurality of domain agents, and an agent library". While the applicants do state that the SDAs of Lin could read on the claimed plurality of domain agents, they argue that Lin does not teach the complete architecture because his architecture lacks at least an agent manager, a system agent, and an agent library *(Amendment, Page 16)*. In response, the examiner notes that Lin does teach the complete agent architecture as is claimed by the applicants. As was indicated in the previous Office Action *(Page 9)*, Lin recites the following- a user interface agent manager that corresponds to the claimed agent manager (Section 2.2-3.1 and Fig. 3), a facilitator/switcher that enables dialog system processes through dialog/state history that corresponds to the claimed system agent *(Figs. 2 and 3)*, a plurality of spoken dialog agents *(SDAs)* that correspond to the claimed plurality of domain agents *(Fig. 3)*, and a database accessible by the agents *(Fig. 3)*. Thus, Lin does teach the applicants' claimed agent architecture.

The applicants next address the art rejection of dependent claim 2. More specifically, the applicants argue that Lin fails to teach the claimed event manager because: the applicants cite a single component for this function, the examiner is inconsistent because the facilitator is used for event switching, Lin allegedly does not teach a multi-thread environment because only one

thread is active and dialog state history is not stored in an SDA *(Amendment, Pages 17-18)*. In response, the examiner notes that it is the facilitator that corresponds to event manager, but works in combination with the user interface as one of its components *(Sections 3.1 and 4)*. Secondly, it is noted that while Lin does discloses that the agents *themselves* do not permanently store the multi-thread dialog data, the facilitator/UI does enable its storage *(Fig. 2 and Section 3.1; "carry over the dialog state and history so as to keep the knowledge processed persistently and consistently across different domains", abstract)*. Furthermore although providing real-time responses is an intended result that flows naturally from a multi-threaded environment *(which is taught by and thus flows naturally from the teachings of Lin as per the above response)*, Lin additionally teaches system implementation in a usable practical travel information service *(Sections 1 and 5)*. Thus, this argument has been fully considered, but is not convincing.

The art rejections of the remainder of the independent and dependent claims are traversed for reasons similar to claim 1 *(Amendment, Pages 17 and 19-20)*. In regards to such arguments, see the response directed towards claim 1.

Claim Objections

5. **Claim 29** is objected to because of the following informalities:

Claims 1-2, 4, 6-8, 10-27, and 57-62 recite various steps/elements "configured to" perform certain functions. It is not certain whether these functions are part of the claim because they are not positively recited only "configured to" perform them. These functions will be considered as being actively performed for the application of the prior art of record.

Claim 29 is objected to for being dependent upon an independent claim that is rejected under 35 U.S.C. 101, however, claim 29 would overcome this rejection if amended to include all of the limitations of its parent claims because it includes physical hardware.

Appropriate correction is required.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned

with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. **Claims 1 and 28** are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 7,398,209 in view of Lin et al *("A Distributed Architecture for Cooperative Spoken Dialogue Agents with Coherent Dialogue State and History," 1999)*. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications essentially refer to the same system/method. Although the present application additionally recites an event manager in the independent claims, this element would obvious in view of the teachings of Lin et al. Lin teaches discloses a user interface agent manager that enables query forwarding to a particular dialog agent for answer retrieval *(Sections 2.2- 3.1 and Fig. 3)* for the benefit of handling dialog across multiple subject domains (or applications) efficiently and intelligently *(Lin, Section 1)*. Although '209 features additional steps/means: "Omission of an element and its function is an obvious expedient if the remaining elements perform the same functions as before". *In re Karlson*, 136 USPQ 184 (1963). Thus, Claims 1 and 28 are not patently distinct from claim 1 of US 7,398,209.

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. **Claims 1-2, 4, 6-8, 10-27, and 57-62** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Although **claim(s) 1 and its associated dependent claims** appear to fall within a statutory category *(i.e., apparatus)*, these claim(s) encompass nothing more than logic/software modules as per the specification *("software includes one or more of the following modules", Pages 5-6)*. Thus, claim(s) 1 and its associated dependent claims are directed to non-statutory subject matter because their scope includes a computer program embodiment, an abstract data structure which does not fall within one of the four statutory categories *(i.e., it is directed to a program per se)*. See also MPEP § 2106.IV.B.1.a. Data structures not claimed as embodied in computer readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. See, e.g., *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure *per se* held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a claimed computer readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory. Similarly, computer programs claimed as computer listings

per se, i.e., the descriptions or expressions of the programs are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. **Claims 1, 2, 4, 6, 13, 15-17, 22-23, 27-28, 31-32, 41, and 57-62** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bennett et al *(U.S. Patent: 6,615,172)* in view of Lin et al *("A Distributed Architecture for Cooperative Spoken Dialogue Agents with Coherent Dialogue State and History," 1999)*.

With respect to **Claim 1**, Bennett discloses:

A speech unit that receives a natural language speech utterance and encodes the user generated natural language speech utterance into an electronic signal, said user generated natural language speech utterance having at least one of a query and a command *(coding a spoken query, Col. 10, Line 54- Col. 11, Line 17; and Col. 15, Line 53- Col. 16, Line 21)*;

A natural language speech processing system that receives, processes and response to the encoded natural language speech utterance using data received from a domain agent *(natural language processor that retrieves a query from a speech signal and forwards the question to a specific application portion to retrieve an answer, Col. 24, Line 46- Col. 25, Line 67; Col. 27, Lines 17-51; and Col. 29, Line 30- Col. 30, Line 7; and agent, Col. 10, Line 54- Col. 11, Line 17)*, wherein the natural language speech processing system includes:

A speech recognition engine that recognizes at least one of words or phrases in the encoded natural language speech utterance using the data received from a plurality of domains, wherein the data used by the speech recognition engine is dynamically updated based on at least a history of one or more prior dialogs associated with the user *(speech recognizer for recognizing query words/phrases that relies on context data from different domains, Col. 7, Lines 17-51; and Col. 27, Lines 17-67)*;

A parser that interprets the recognized words or phrases using the data received from the plurality of domains *(natural language understanding means, Col. 17, Lines 27-36)*, wherein the parses interprets the recognized words or phrases by:

Determining a context for the natural language speech utterance *(natural language understanding means utilizing parsing to determine an application domain based on user speech content and context, Col. 11, Line 59- Col. 12, Line 10; Col. 17, Lines 28-67; and Col. 27, Lines 17-51)*.

Selecting one of the contexts based on the determined contexts *(natural language speech processor that identifies a selects a grammar context, Col. 11, Lines 34-38; Col. 17, Lines 28-67; Col. 27, Lines 17-51; and Col. 29, Line 47- Col. 30, Line 2)*; and

Transforming the recognized words or phrases into at least one of a question or a command, the at least one of said query and said command formulated in a grammar that the selected domain agent uses to process the formulated question or command *(natural language processor uses grammars that provides and generates the available user queries, Col. 11, Lines 34-38; Col. 17, Lines 28-67; and Col. 27, Lines 17-51)*; and

A shared architecture between system *components (Col. 11, Lines 34-38).*

Although Bennett discloses processing a natural language query, forwarding the query to a specific application portion based on context, method use with multiple application domains *(Col. 29, Line 47-Col. 30, Line 2)*, and answer generation *(Col. 24, Line 46- Col. 25, Line 67; Col. 27, Lines 17-51; and Col. 29, Line 30- Col. 30, Line 7)*, Bennett does not explicitly disclose the use of arbitrating means for selecting and forwarding a query to an executable dialog agents associated with different domains. Lin, however discloses a user interface agent manager that enables query forwarding to a particular dialog agent for answer retrieval *(Sections 2.2- 3.1 and Fig. 3)*. Lin further teaches that each spoken dialogue agent (SDA) has access to the same set of Internet-enabled services and databases and functional system agents *(Fig. 2 and 3)*. Also, each SDA can access information services as a result of a shared dialogue/state history *(Fig. 3)*. In this cooperative case, an SDA can access services of all the SDAs through other SDAs via a switching routine *("sends the dialogue state and history to the new SDA", Section 3.1)*. Lin further teaches a non-acoustic speech recognition graph search portion that relies on domain specific data from the SDAs *(Lexicon, Grammar Rules, and Language Models, Fig. 2; and Fig. 5)*. Finally, Lin teaches an architecture wherein a user interface agent receives responses from the specific SDAs and then transmits them to a user *(Figs. 2-3)*.

Bennett and Lin are analogous art because they are from a similar field of endeavor in information retrieval systems utilizing speech recognition. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Bennett with the interface agent architecture taught by Lin in order to handle dialog across multiple subject domains (or applications) efficiently and intelligently *(Lin, Section 1)*.

With respect to **Claim 2**, Lin further discloses:

The natural language speech processing system further comprises an event manager, which sends and receives events to components of the natural language speech processing system to coordinate interaction between components of the natural language speech processing system, wherein the event manager includes a multi-threaded environment configured to enable the natural language speech processing system to provide real-time response to a plurality of questions or commands across a plurality of user sessions *(user interface agent having a facilitator, Fig. 3 that allows for passing multi-thread information among other SDA sessions, Section 3.1; and abstract)*.

With respect to **Claim 4**, Bennett further discloses:

A text to speech engine that creates an encoded speech message to be annunciated to the user *(text-to-speech engine, Col. 10, Lines 54-67; text-to-sound file creation at a server, Col. 22, Lines 7-17; and answer is compressed, Col. 25, Lines 59-67)*.

With respect to **Claim 6**, Lin further discloses dialog domain agents associated with travel information *(Fig. 3)*.

With respect to **Claim 13**, Lin further discloses:

The communicatively coupled services include at least one remotely located service and the selected domain agent includes data for controlling or communicating with the remotely located service *(remote database and Internet services, which the SDAs are capable of communicating with or controlling, Fig. 3)*.

With respect to **Claim 15**, Bennett further discloses:

The speech unit and the natural language speech processing system each include respective transceivers that communicate via a communication network *(client and server components with receiver/transmitter means for communicating over a network, Fig. 1)*.

With respect to **Claim 16**, Bennett further discloses:

The communication network is a wide area wireless network *(large scale system employing a wireless communication medium, Col. 10, Lines 33-53)*.

With respect to **Claim 17**, Bennett further discloses:

The transceiver is a wide-area RF transceiver *(RF link over a cellular network, Col. 10, Lines 33-53)*.

With respect to **Claim 22**, Bennett further shows:

The speech unit is located remotely from the natural language speech processing system and the transceiver *(Fig. 1)*.

With respect to **Claim 23**, Bennett further discloses a display *(Col. 10, Lines 54-65)*.

With respect to **Claim 27**, Bennett discloses a network for cellular phones *(Col. 10, Lines 33-53)*, while Lin recites a common database of dialog states/histories and network database shared across multiple common agents *(Fig. 3)*.

Claim 28 recites subject matter similar to Claim 1, and thus, is rejected for the same reasons.

Claim 31 contains subject matter similar to claim 6, and thus, is rejected under similar rationale.

Claim 32 contains subject matter similar to claim 13, and thus, is rejected under similar rationale.

Claim 41 contains subject matter similar to claim 27, and thus, is rejected under similar rationale.

With respect to **Claim 57**, Bennett further discloses:

Load and initialize the system agent and the domain agent(s) when the natural language speech processing system boots-up *(management for agent and system communication capabilities for boot-up processing, Col. 20, Line 45- Col. 21, Line 53)*;

Unload the system agent and the agent(s) when the natural language speech processing system shuts-down *(management for agent and communication shut down, Col. 24, Lines 9-35)*;

While Lin discloses the multi-agent architecture as applied to claim 1 and further recites:

Perform license management for the plurality of domain agents and content stored in one or more databases *(facilitator/UI is a functional component that manages the registered associated SDAs and databases, Fig. 3; Section 2.1 and Section 3.3)*; and

Search a network to find a source for a suitable agent if the question or command requires an agent not currently loaded on the natural language speech processing system *(new agent is located and discovered for a different topic, Section 3.3)*.

With respect to **Claim 58**, Lin further discloses:

The agent library includes one or more utilities for commonly used functions in the natural language speech processing system, wherein the commonly used functions include at least one of text and string handling, network communications, database lookup and management, fuzzy and probabilistic evaluation, or text to speech formatting *(database server lookup/management shared among multiple agents, Fig. 3)*.

With respect to **Claim 59**, Lin further discloses:

Provide default functionality and foundation services that can be used by each of the plurality of domain agents *(facilitator allows sharing among core services in the dialog system, Fig. 3 and Section 3.1)*;

Use the utilities of the agent library for the commonly used functions *(enabling agent operation to access databases for information retrieval, Figs. 3 and 6; Section 3.3)*; and

Manage one or more criteria handlers used to determine the context for the natural language speech utterance, wherein the one or more criteria handlers provide context sensitive procedures for extracting information from the at least one question or command *(facilitator enables/activates an SDA and access to it's associated dialog manager which allows for the determination of context for further understanding and subsequent answer retrieval, Fig. 2; and Section 2.2)*.

With respect to **Claim 60**, Bennett further discloses:

Determine an identity of the user based on unique voice characteristics of the user *(speaker identification in speaker dependent recognition, Col. 12, Lines 47-56)*; and

Tag the recognized words or phrases with the identity of the user to associate the utterance with the user and a dialog in the natural language speech processing system *(words in a*

user's question are tagged for association with a user for sending back an answer, Col. 7, Lines 22-33; and Col. 8, Lines 1-7).

With respect to **Claim 61**, Bennett further discloses:

The data used by the speech recognition engine is dynamically updated based on one or more dynamic fuzzy set possibilities or prior probabilities *(speech recognition models are dynamically updated in a recognizer according to prior probability distributions, Col. 13, Lines 6-24; and Col. 27, Lines 17-51).*

With respect to **Claim 62**, Lin further discloses method implementation in a real-time practical travel dialog system *(Abstract; and Sections 1 and 5).*

12. **Claims 7-8, 10-12, 30, and 38-39** rejected under 35 U.S.C. 103(a) as being unpatentable over Bennett et al in view of Lin et al and further in view of Gerson *(U.S. Patent: 6,937,977).*

With respect to **Claims 7-8 and 10**, Bennett in view of Lin discloses dialog agents capable of retrieving responses to speech inputs for a number of different applications, as applied to Claim 1. Bennett in view of Lin does not specifically disclose an application domain related to communicating with a vehicle device in order to enable device control. Gerson, however, discloses a vehicle control server application that recognizes a control command and communicates a command message back to a vehicle device to enable device control *(Col. 6, Line 66-Col. 7, Line 15).*

Bennett, Lin, and Gerson are analogous art because they are from a similar field of endeavor in speech-controlled systems. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Bennett in view of

Lin with the vehicle device control application taught by Gerson in order to increase system applicability by enabling its use for hands-free control of vehicle devices *(Gerson, Col. 6, Line 66- Col. 7, Line 15; and Col. 9, Lines 5-8)*.

With respect to **Claim 11**, Gerson further shows the vehicle control application located remotely from a vehicle *(Fig. 1)*.

With respect to **Claim 12**, Gerson further discloses control of a vehicle entertainment system and other vehicle devices *(Col. 6, Line 66- Col. 7, Line 15)*.

Claim 30 contains subject matter similar to claim 10, and thus, is rejected under similar rationale.

13. Claim 14 and 33-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bennett et al in view of Lin et al and further in view of Hedin et al *(U.S. Patent: 6,185,535)*.

With respect to **Claim 14**, Bennett in view of Lin discloses dialog agents capable of retrieving responses to speech inputs for a number of different applications, as applied to Claim 13. Bennett in view of Lin does not specifically disclose the communication of a recognized command with a remotely located specialized service application, however, Hedin discloses a speech recognizer that sends a recognized speech command message to an external service *(Col. 9, Line 36- Col. 10, Line 24; and Fig. 3, Elements 205, 207 and 307)*.

Bennett, Lin, and Hedin are analogous art because they are from a similar field of endeavor in speech-controlled systems. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Bennett in view of

Lin with the remote service communication means taught by Hedin in order to enable access and control of remote server applications *(Hedin, Col. 2, Lines 39-42).*

With respect to **Claim 33**, Bennett in view of Lin discloses dialog agents capable of retrieving responses to speech inputs for a number of different applications, as applied to Claim 32. Bennett in view of Lin does not specifically disclose the communication of a recognized command/result with a remotely located service, however, Hedin discloses a speech recognizer that sends a recognized speech command message to an external service *(Col. 9, Line 36- Col. 10, Line 24; and Fig. 3, Elements 205, 207 and 307).*

Bennett, Lin, and Hedin are analogous art because they are from a similar field of endeavor in speech-controlled systems. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Bennett in view of Lin with the remote service communication means taught by Hedin in order to enable access and control of remote server applications *(Hedin, Col. 2, Lines 39-42).*

With respect to **Claim 34**, Hedin further discloses the remotely located server device as shown in Fig. 1b.

Claim 35 contains subject matter similar to Claim 15, and thus, is rejected for the same reasons.

Claim 36 contains subject matter similar to Claim 14, and thus, is rejected for the same reasons.

Claim 37 contains subject matter similar to Claim 17, and thus, is rejected for the same reasons.

14. **Claims 18, 20-21, and 29** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bennett et al in view of Lin et al and further in view of DeLine et al *(U.S. Patent: 6,420,975)*.

With respect to **Claim 18 and 20**, Bennett in view of Lin discloses the dialog agent system capable of receiving and encoding a user speech input, as applied to Claim 1. Also, Bennett further discloses:

The speech unit includes a speech coder that encodes the natural language speech utterance into the electronic signal *(speech coding means, Col. 15, Line 53- Col.16, Line 21)*, a microphone that receives the natural language speech utterance *(microphone, Col. 7, Lines 11-14)*, and a filter that optimizes a SNR of the encoded natural language speech utterance *(digital filter used to enhance the input speech signal, Col. 15, Line 27- Col. 16, Line 21)*.

Bennett in view of Lin does not specifically suggest that a speech input from a user is received via a one-dimensional microphone array, however DeLine discloses the use of such an array in a speech-enabled control system *(lined array of microphones, Col. 48, Lines 53-63)*.

Bennett, Lin, and DeLine are analogous art because they are from a similar field of endeavor in speech-controlled systems. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Bennett in view of Lin with the one dimensional microphone array taught by DeLine in order to enhance vocal signal content and eliminate acoustic noise *(DeLine, Col. 48, Lines 53-63)*.

With respect to **Claim 21**, Bennett further discloses:

The speech coder uses an adaptive lossy audio compression *(speech encoding that includes only the least amount of information necessary to adequately and quickly complete speech recognition, Col. 15, Line 543- Col. 16, Line 21)*.

Claim 29 contains subject matter similar to claim 18, and thus, is rejected under similar rationale.

15. **Claims 19 and 38-39** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bennett et al in view of Lin et al and further in view of DeLine et al and yet further in view of Gerson *(U.S. Patent: 6,937,977)*.

With respect to **Claim 19**, Bennett in view of Lin and further in view of DeLine discloses the dialog agent system capable of receiving and encoding a user speech input, as applied to Claim 18. The aforementioned prior art does not explicitly teach adaptive echo cancellation, however, Gerson, in an analogous field of art in speech-controlled systems, teaches an echo canceling block capable of eliminating echoes and noise in varying conditions that provides the added benefit to the other prior art of preventing an echo from being recognized at a speech recognizer *(Col. 9, Line 24-Col. 10, Line 10)*.

With respect to **Claims 38-39**, Gerson further discloses an echo canceling block capable of eliminating echoes and noise in varying conditions that provides the benefit of preventing an echo from being recognized at a speech recognizer *(Col. 9, Line 24-Col. 10, Line 10)*.

16. **Claims 24-26 and 42-43** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bennett et al in view of Lin et al and further in view of Turnbull et al *(U.S. Patent: 6,980,092)*.

With respect to **Claims 24-25**, Bennett in view of Lin discloses the speech interactive system, as applied to Claim 1. Bennett in view of Lin does not specifically suggest system implementation in a telematics control unit. Turnbull, however, discloses implementation of a

speech interactive system embedded in a telematics device *(speech recognition processing, Col. 30, Line 43- Col. 31, Line 2, in an in-vehicle telematics assembly, Col. 29, Lines 56-63; controlling in-vehicle devices in response to recognized voice commands, Col.28, Line 53- Col. 29, Line 36, Col. 30, Line 43- Col. 31, Line 2, and Col. 36, Lines 57-63; and control bus for sending control signals to the various vehicle devices, Fig. 11, Element 102).*

Bennett, Lin, and Turnbull are analogous art because they are from a similar field of endeavor in speech-controlled systems. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Bennett in view of Lin with the telematics unit taught by Turnbull in order to implement a speech communication and control system that can be readily installed in a vehicle *(Turnbull, Col. 3, Lines 20-22).*

With respect to **Claim 26**, Turnbull discloses the in-vehicle telematics unit as applied to Claims 24-25.

Claim 42 contains subject matter similar to claim 24, and thus, is rejected under similar rationale.

With respect to **Claim 43**, Turnbull further discloses remote network resources located at a different location than a vehicle *(Col. 35, Lines 48-67).*

Conclusion

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632. The examiner can normally be reached on M-Th, 7:30-5:00, F, 7:30-4, Off Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached at (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/James S. Wozniak/
Primary Examiner, Art Unit 2626